

ANNOTATIONES ZOOLOGICAE JAPONENSES
VOL. X, ARTICLE 34.

On an Interesting Braconid-fly Parasitic
of a Tinea-moth.

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(Received Nov. 8, 1924)

The Braconid-fly serving as basis for this brief account was found infesting the caterpillar of a noxious moth, *Tinea pellionella* L., which subsists on various kinds of cloths. In spite of being most closely related to the genus *Mesocrina*, it apparently stands at variance with this in having the abdomen dorso-ventrally depressed and the third and fourth antennal joints of an approximately equal length. To me it seems that the differences are of sufficient weight to base even generic distinction on. To the fly in question I would suggest the new generic and specific name of.

Paramesocrina tineavora.

This interesting fly is of a small size, measuring in the female 1.5 mm. long by 0.5 mm. broad and in the male about 1 mm. long by 0.3 mm. broad. The wing-expansion is 3.5 mm. in the former and 3.2 mm. in the latter.

Head.—The head is a great deal narrower than the thorax, its hind portion being marked in the center with a fovea. It is of a shining black colour with a touch of brown tint. The maxillary and labial palpi are white in colour, the former being composed of six joints, the latter of four.

The antennæ consist in the female of twelve joints and in the male of eleven, their total length being about two-thirds that of the

body and measuring in the former 1 mm. and in the latter 0.6 mm. The first proximal joint is very stout and the longest of all ; the second is stout and the shortest ; the others are all of almost similar size and shape, and are a little longer than the second joint. The antennæ are of a brown colour, which becomes darker towards the end.

Thorax.—The thorax is made up as usual of three segments of pro-, meso- and meta-thorax. Of these the pro-thorax consists of two parts, the proepisternum (eps_1) front and the pronotum (n_1) behind, the latter being much longer than the former and entirely overlapped by the mesoprescutum. Only a part of the proepisternum can be seen in lateral aspect as a slender band.

The meso-thorax is an extensive part of the thorax, its mesoprescutum (p_{sc}_2) being of an almost triangular shape and marked in the median line with a comparatively large furrow. On each side of the mesoprescutum comes the mesoscutum (sc_2), which is incompletely separated from it by a suture, the scutoprescutal suture (h). They assume as a whole a nearly elliptical form. The mesoscutellum (sc_2) is divided into an anterior and a posterior part, both of which are marked on the surface with some rectangular meshes of slightly raised ridges. In the female the meshes count eight in the anterior subdivision, where they are symmetrically arranged, as in Fig. 5. The posterior subdivision presents in the middle a large fan-shaped mesh, on either side of which come four meshes of varying sizes, the outermost one being the largest. In the male the two subdivisions are not so conspicuously meshed as compared with those of the female.

When viewed from the lateral side, the mesoprescutum is sickle-shaped, while the mesoscutum is almost triangular, beneath which extends a part of the pronotum. Near the junction point of the mesoscutum, the pronotum and the meso-episternum (Eps_2) there occurs a spiracle, which is not so conspicuous. Attached to the meso-thorax between the anterior border of the mesoepisternum and the mesoscutum is the fore wing, just anterior to the base of which lines the

tegula of a brown colour. The scuto-scutellar suture (k) is very conspicuous.

The meta-thorax is the smallest part of the thorax, being a great deal wider than long and regularly meshed on the surface with raised ridges. In the female it presents in the median part a moderately large, fan-shaped mesh, on either side of which are found five almost rectangular meshes of varying sizes. In lateral view the metanotum (n_3) is of a rectangular shape. In the male the meshes are few in number. The metapleurum is indistinctly divided into two, the upper (Pl_3) and the lower plate (pl_3), the suture between them being not distinct. The hind wing springs from near the upper plate.

Wing.—The fore wing (Fig. 8) is transparent, its stigma being elongate-elliptical in shape, black in colour and beset in scattered distribution with short hairs, as is seen on the nervures which are of a black colour. There occur three cubital cells, of which the first cell (6) is pentagonal in contour and distinctly separated from the first discoidal (4). The second cubital cell (7) is completely closed and of an almost rectangular shape. The cubitus ($l-m-n-o-p$) is not complete and terminates nearly mid-way between o and p ; consequently the third cubital cell (8) is not completely bounded. The radius is divided into three abscissae, the first of which ($g-h$) is the shortest, being about a half of the second ($h-i$) and a quarter of the third ($i-k$).

The hind wing (Fig. 9) has the anal nervure which is almost one half the median and is entirely obliterated between f and g . The three nervures of the radius, cubitus and discoidal are highly reduced.

The legs are constructed on the same plan as those found in other Braconid-flies.

Abdomen.—The abdomen is dorso-ventrally depressed and composed of nine segments, of which the first propodeum (it), though theoretically an abdominal segment, looks as usual like a part of the meta-thorax. In the female the propodeum is marked in the middle with a large rhombic mesh of raised ridges, from the anterior and

lateral corners of which a ridge is given off. In the male the mesh differs in shape from that found in the female, as in Fig. 6. Dorsally the second and third segments are distinctly separated from each other, the former being marked in the median part with a horse shoe-shaped ridge. The third and fourth segments are fused together, the suture between them being indistinct on the dorsal surface and rather distinct on the ventral. They are of a light brownish colour, being marked dorsally with some minute deep brown spots and ventro-laterally with a light brown pattern of a nearly triangular contour. About the above triangular pattern there exist a few short setae. Similarity is also true of the fifth segment. The other segments from the fifth to the last are drawn, when at rest, into the fourth segment. They are on the dorsal surface of a brown colour, and are furnished with some setae. The eight-paired spiracles occur on the segments from the first to the eighth. Of the abdominal segments the posterior three are ventrally disposed in a position almost perpendicular to the anterior, or parallel to the terebra, which is attached to the sixth segment. The terebra is composed of three long processes which have a length of about 0.5–0.6 mm. When at rest, it comes to lie inside the sheath arising from the mid-dorsal part of the last segment.

Habits.—This remarkable fly usually attacks the caterpillar of *Tinea pellionella* and appears to pass its several stages within it. In the majority of instances the host has been found to contain a single parasite though very rarely it is infested by two or three individuals. From the results of breeding experiments carried on during the past two years, it has become clear that the fly can be reared throughout the year, even in the winter. Generally speaking, it passes, however, at least five generations in a year, namely once in the spring, autumn and winter and twice in the summer.

The number of both sexes is approximately equal, though my records show a little excess of females. After emerging from the body of their host, the males die sooner as compared with the females which survive the other sex for a considerable length of time to lay eggs.

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Explanation of Plate.

Fig. 1. Female imago of *Paramesocrina tineavora* gen. et sp. nov.

Fig. 2. Mouth-parts, seen from above.

lg ligula, *lm* labium, *pl* labial palpus,
ml mandible, *mt* mentum, *mx* maxilla,
mxp maxillary palpus, *smt* submentum, *st* stipes.

Fig. 3. The same, seen from below.

Index letters as in Fig. 2.

Fig. 4. Antenna of female.

Fig. 5. Thorax of female, dorsal view.

it propodeum, *n3* metanotum, *psc2* mesoprescutum,
sc12 mesoscutellum, *sc2* mesoscutum, *tg* tegula,
II second abdominal segment.

Fig. 6. Thorax of male, dorsal view.

Index letters as in Fig. 5.

Fig. 7. The same, lateral view.

Cx1-3 coxa, *epm2* mesoepimerum, *eps1* proepisternum.
Eps²-eps2 upper and lower subdivisions of mesoepisternum.
h scuto-prescutal suture,

k scuto-scutellar suture of mesonotum, *m* pronotum,
Pa-pl upper and lower subdivisions of metapleurum,
pra metapostnotum fused with propodeum, *sp* spiracle, Other
 latters as in Fig. 5.

Fig. 8. Fore wing.

1 costal cell, 2 median cell, 3 anal cell,
 4 1st discoidal cell, 5 2nd discoidal cell,
 6 1st cubital cell, 7 2nd cubital cell,
 8 3rd cubital cell, 9 radial cell,
 10 1st posterior cell, 11 2nd posterior cell,
ab costal and sub-costal nervures united,
afe median nervure, *afd* anal nervure,
ghik radial nervure, *gh* 1st abscissa, *hi* 2nd abscissa,
ik 3rd abscissa, *l-m-n-o-p* cubital nervure,
gr posterior nervure, *sk* metacarpe nervure,
lm 1st transverse cubital nervure, *io* 2nd transverse
 cubital nervure, *lf* margino-discoidal nervure,
Cm recurrent nervure, *fe* medio-discoidal nervure.

Fig. 9. Hind wing.

1 brachial cell, 2 costal cell, 3 median cell,
 4 anal cell, 5 & 6 radial and cubital cell united,
 6 posterior cell, *ab* costal nervure,
acb sub-costal nervure, *aed* median nervure,
afg anal nervure, *ed* transverse discoidal nervure,
ef medio-discoidal nervure,

Fig. 10. A portion of female abdomen drawn out.

6-7 6th-9th segments, *tr* terebra.